

This listing of claims will replace all prior versions of claims in the application.

Listing of Claims: Please amend the claims as follows:

We claim:

**Claim 37. (Currently Amended)** A pharmaceutical composition for the treatment of pancreatic diseases, obesity, metabolic syndrome, metabolic diseases or dysfunctions, or for controlling the function of a gene or a gene product which is influenced or modified by a DG153 polypeptide comprising a polypeptide which is DG153 or DG177 protein and/or a functional fragment thereof, a nucleic acid molecule encoding a DG153 or DG177 protein and/or a functional fragment thereof and/or an effector/modulator of said nucleic acid molecule and/or said protein or protein fragment, wherein the composition optionally contains

- (a) a polypeptide consisting essentially of a polypeptide sequence set forth in SEQ ID NO: 2, SEQ ID NO: 3 or SEQ ID NO: 5, or an isoform, fragment or variant of the polypeptide sequence set forth in SEQ ID NO: 2, SEQ ID NO: 3 or SEQ ID NO: 5;
- (b) a polypeptide which is encoded by a polynucleotide consisting essentially of a sequence set forth in SEQ ID NO: 1 or 4;
- (c) a polypeptide which is encoded by an RNA equivalent of the polynucleotide consisting essentially of a sequence set forth in SEQ ID NO: 1 or SEQ ID NO: 4;
- (d) a polypeptide which is encoded by a polynucleotide which hybridizes at 50°C in a solution containing 1 x SSC and 0.1% SDS to a polynucleotide which is complementary to SEQ ID NO: 1 or SEQ ID NO: 4; or
- (e) a polypeptide which exhibits at least 80% sequence identity to a polypeptide sequence under (a);  
and a pharmaceutically acceptable carrier, diluent, or additive carriers, diluents, and/or additives.

**Claim 38. (Withdrawn)** The composition of claim 37, wherein the nucleic acid molecule is a mammalian DG153 or DG177 nucleic acid, particularly encoding the human DG153 or DG177 polypeptide and/or a nucleic molecule which is complementary thereto or a fragment thereof or a variant thereof.

**Claim 39. (Withdrawn)** The composition of claim 38, wherein said nucleic acid molecule is selected from the group consisting of

- (a) a nucleic acid molecule encoding a polypeptide as shown in SEQ ID NO: 2, 3 or 5, or an

isoform, fragment or variant of the polypeptide as shown in SEQ ID NO: 2, 3 or 5;

(b) a nucleic acid molecule which comprises or is the nucleic acid molecule as shown in SEQ ID NO: 1 or 4;

(c) a nucleic acid molecule being degenerate with as a result of the genetic code to the nucleic acid sequences as defined in (a) or (b).

(d) a nucleic acid molecule that hybridizes at 50°C in a solution containing 1 x SSC and 0.1% SDS to a nucleic acid molecule as defined in claim 2 or as defined in (a) to (c) and/or a nucleic acid molecule which is complementary thereto;

(e) a nucleic acid molecule that encodes a polypeptide which is at least 85%, preferably at least 90%, more preferably at least 95%, more preferably at least 98% and up to 99.6% identical to the human DG153 or DG177, as defined in claim 38 or to a polypeptide as defined in (a);

(f) a nucleic acid molecule that differs from the nucleic acid molecule of (a) to (e) by mutation and wherein said mutation causes an alteration, deletion, duplication or premature stop in the encoded polypeptide.

**Claim 40. (Withdrawn)** The composition of claim 37, wherein the nucleic acid molecule is a DNA molecule, particularly a cDNA or a genomic DNA.

**Claim 41. (Currently Amended)** The composition of claim 37, ~~wherein said nucleic acid molecule is a recombinant nucleic acid molecule and~~ wherein said polypeptide is a recombinant polypeptide, e.g. a fusion polypeptide.

**Claim 42. (Withdrawn)** The composition of claim 37, wherein the nucleic acid molecule is a vector, particularly an expression vector.

**Claim 43. (Withdrawn)** The composition of claim 37, wherein said nucleic acid molecule is selected from hybridization probes, primers and anti-sense oligonucleotides.

**Claim 44. (Currently Amended)** ~~The composition of claim 37 which is a diagnostic and/or composition or a therapeutic composition which comprises a polypeptide which is~~

(a) ~~a polypeptide consisting essentially of an amino acid sequence set forth in SEQ ID NO: 2, SEQ ID NO: 3 or SEQ ID NO: 5, or an isoform, fragment or variant of the polypeptide sequence set forth in SEQ ID NO: 2, SEQ ID NO: 3 or SEQ ID NO: 5;~~

(b) ~~a polypeptide which is encoded by a polynucleotide consisting essentially of a sequence set~~

forth in SEQ ID NO: 1 or 4;

- (c) a polypeptide which is encoded by an RNA equivalent of the polynucleotide consisting essentially of a sequence set forth in SEQ ID NO: 1 or SEQ ID NO: 4;
- (d) a polypeptide which is encoded by a polynucleotide which hybridizes at 50°C in a solution containing 1 x SSC and 0.1% SDS to a polynucleotide which is complementary to SEQ ID NO: 1 or SEQ ID NO: 4; or
- (e) a polypeptide which exhibits at least 80% sequence identity to an amino acid sequence under (a);  
and a diagnostic moiety or a therapeutic moiety which is linked to said polypeptide.

**Claim 45. (Currently Amended)** ~~The composition of claim 37 for the manufacture of an Δn agent for~~

- a) detecting and/or verifying for the treatment, alleviation and/or prevention of pancreatic diseases (e.g. diabetes such as insulin dependent diabetes mellitus or non insulin dependent diabetes mellitus), obesity, metabolic syndrome and/or other metabolic diseases or dysfunctions;
- b) for the modulation of pancreatic development; or
- c) for the regeneration of pancreatic tissues or cells, particularly pancreatic beta cells which comprises the composition according to claim 37 and a carrier.

**Claim 46. (Currently Amended)** The composition of claim 37 for application in vitro or in vivo in vivo or in vitro.

**Claim 47. (Currently Amended)** Use of a DG153 or DG177 nucleic acid molecule or a polypeptide encoded thereby or a fragment or a variant of said nucleic acid molecule or said polypeptide and/or an effector/modulator of said nucleic or polypeptide for the manufacture of a medicament Δ method for the treatment of pancreatic diseases (e.g. diabetes such as insulin dependent diabetes mellitus or non insulin dependent diabetes mellitus), obesity, metabolic syndrome and/or other metabolic diseases or dysfunctions, or for controlling the function of a gene and/or a gene product which is influenced and/or modified by a DG153 or DG177 polypeptide, comprising administering to a subject in need thereof, the pharmaceutical composition according to claim 37.

**Claim 48. (Withdrawn)** Use of a DG153 or DG177 nucleic acid molecule or use of a polypeptide encoded thereby, or use of a fragment or a variant of said nucleic acid molecule or said polypeptide, or use of an effector/modulator of said nucleic acid molecule or said polypeptide for

identifying substances capable of interacting with a DG153 or DG177 polypeptide in vitro and/or in vivo.

**Claim 49. (Withdrawn)** A non-human transgenic animal exhibiting a modified expression of a DG153 or DG177 polypeptide, particularly wherein the expression of DG153 or DG177 is increased and/or reduced.

**Claim 50. (Withdrawn)** A recombinant host cell exhibiting a modified expression of a DG153 or DG177 polypeptide, or a recombinant host cell which comprises a nucleic acid molecule as defined in claim 37, wherein the host cell is particularly a human cell.

**Claim 51. (Withdrawn)** A method of identifying a (poly)peptide involved in the regulation of energy homeostasis and/or metabolism in a mammal comprising the steps of

- (a) contacting a collection of (poly)peptides with a DG153 or DG177 homologous polypeptide or a fragment thereof under conditions that allow binding of said (poly)peptides;
- (b) removing (poly)peptides which do not bind and
- (c) identifying (poly)peptides that bind to said DG153 or DG177 homologous polypeptide.

**Claim 52. (Withdrawn)** A method of screening for an agent which effects/modulates the interaction of a DG153 or DG177 polypeptide with a binding target comprising the steps of

- (a) incubating a mixture comprising
  - (aa) a DG153 or DG177 polypeptide or a fragment thereof;
  - (ab) a binding target/agent of said DG153 or DG177 polypeptide or fragment thereof; and
  - (ac) a candidate agent under conditions whereby said polypeptide or fragment thereof specifically binds to said binding target at a reference affinity;
- (b) detecting the binding affinity of said DG153 or DG177 polypeptide or fragment thereof to said binding target to determine an affinity for the agent; and
- (c) determining a difference between affinity for the agent and reference affinity.

**Claim 53. (Withdrawn)** A method for screening for an agent, which effects/modulates the activity of a DG153 or DG177 polypeptide, comprising the steps of

- (a) incubating a mixture comprising
  - (aa) a DG153 or DG177 polypeptide or a fragment thereof; and

- (ab) a candidate agent under conditions whereby said DG153 or DG177 polypeptide or fragment thereof exhibits a reference activity,
- (b) detecting the activity of said DG153 or DG177 polypeptide or fragment thereof to determine an activity for the agent; and
- (c) determining a difference between activity for the agent and reference activity.

**Claim 54. (Withdrawn)** Use of a nucleic acid molecule as defined in claim 37 for the preparation of a medicament (i) for the treatment, alleviation and/or prevention of diseases or dysfunctions, including pancreatic diseases (e.g. diabetes), obesity, and/or metabolic syndrome, (ii) for the modulation of pancreatic development and/or (iii) for the regeneration of pancreatic cells or tissues.

**Claim 55. (Currently Amended)** Use of a polypeptide as defined in claim 37 for the preparation of a medicament A method (i) for the treatment, alleviation and/or prevention of pancreatic diseases (e.g. diabetes), obesity, and/or metabolic syndrome, (ii) for the modulation of pancreatic development and/or or (iii) for the regeneration of pancreatic cells or tissues in a subject in need thereof, comprising administering to said subject, the composition according to claim 44.

**Claim 56. (Withdrawn)** Use of a vector and/or a host cell based on a nucleic acid molecule of claim 50, for the preparation of a medicament (i) for the treatment, alleviation and/or prevention of pancreatic diseases (e.g. diabetes), obesity, and/or metabolic syndrome, (ii) for the modulation of pancreatic development and/or (iii) for the regeneration of pancreatic cells or tissues.

**Claim 57. (Withdrawn)** Use of a DG153 or DG177 nucleic acid molecule or of a fragment thereof for the production of a non-human transgenic animal which over or under expresses the DG153 or DG177 gene product.

**Claim 58. (Cancelled)**

**Claim 59. (New)** The composition according to claim 37, wherein the polypeptide is a fusion polypeptide.

**Claim 60. (New)** The composition according to claim 37, for the treatment, alleviation

and/or prevention of diabetes.

**Claim 61. (New)** The composition according to claim 37, wherein the diabetes is insulin dependent diabetes mellitus or non insulin dependent diabetes mellitus.

**Claim 62. (New)** The agent according to claim 45, for the treatment, alleviation and/or prevention of diabetes.

**Claim 63. (New)** The agent according to claim 45, wherein the diabetes is insulin dependent diabetes mellitus or non insulin dependent diabetes mellitus.

**Claim 64. (New)** The agent according to claim 45, wherein the pancreatic cells are pancreatic beta cells.

**Claim 65. (New)** The method according to claim 47, wherein the pancreatic disease is diabetes.

**Claim 66. (New)** The method according to claim 47, wherein the pancreatic disease is insulin dependent diabetes mellitus or non insulin dependent diabetes mellitus.

**Claim 67. (New)** A polypeptide which is

- (a) a polypeptide which consists of the polypeptide sequence set forth in SEQ ID NO: 2, SEQ ID NO: 3 or SEQ ID NO: 5;
- (b) a polypeptide which is encoded by a polynucleotide which consists of the sequence set forth in SEQ ID NO: 1 or 4;
- (c) a polypeptide which is encoded by an RNA equivalent of a polynucleotide which consists of the sequence set forth in SEQ ID NO: 1 or SEQ ID NO: 4.